Peabody Computer Music: 46 Years of Looking to the Future

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ABSTRACT

There are many significant firsts in the history of Peabody Computer Music (PCM). It is the first electronic and computer music studio in a conservatory in the United States [1]. Peabody itself is the first conservatory of music in the U.S., [1] and our parent institution, the Johns Hopkins University, is America’s first research university [2].

For 46 years PCM has been training highly-skilled musicians to use computers and technology for composition, performance, and music-related research. We work within the context of a conservatory that prizes the great accomplishments of the past even as we develop new musical vocabularies and techniques for the expressive musician of the future. New dean Fred Bronstein is a vital force in leading the oldest music conservatory in the U.S. into the 21st century [3]. One of his first actions was to host a university-wide symposium “What’s Next for Classical Music?” [4], [5].

PCM reaches out to new international and inter-institutional collaborations. Of particular promise is the new collaboration between Peabody, Johns Hopkins and the Maryland Institute College of Art under the artistic direction of digital pioneer Thomas Dolby, recently named the first Homewood Professor of the Arts. This new enterprise, dubbed “Station North Arts”, will bring together film, composition, recording arts, and computer music [6].

1. LOOKING BACK

On January 31, 2011, The Peabody Conservatory of the Johns Hopkins University produced a memorial concert for Jean Eichelberger Ivey. Ivey, the founder of the Electronic Music Studio at Peabody, had passed away the previous Spring (May 2, 2010). The concert featured three of her compositions: Cortege for Charles Kent (a tape piece which was the first piece created in the Peabody Electronic Music Studio), Aldebaran (for viola and tape), and Skaniadaryo (for piano and tape). In addition, there were compositions by three of her former students: McGregor Boyle, Scott Pender, and Geoffrey Wright. In between the performances friends and former students of Ivey shared their memories of her—resulting in a touching tribute to this wonderful composer, teacher, mentor, and friend.

Figure 1. The George Peabody Library

1.1 46 Years of Looking to the Future

The history of Electronic Music at Peabody can be traced back to a series of summer workshops in Electronic Music. These workshops, taught by Dr. Ivey, began in 1967, and focused on electronic music in the K-12 curriculum. Peabody’s Electronic Music department was officially founded when Peabody purchased its first Moog modular analog synthesizer (Model 10) in 1969, and conservatory classes commenced. Robert Moog himself delivered the synthesizer to Peabody, and helped set the unit up.

For several years the Moog along with three analog two-channel tape recorders, Bode filters, microphones, and other analog signal processors made up the essence of the studio. The purchase of a second, larger Moog (Model 55) in 1977 and the addition of analog four-channel and eight-channel machines expanded the studio’s capabilities tremendously. The Moog synthesizers have been carefully maintained and are used regularly for educational and production purposes. This year the Moog 55 was again overhauled, meticulously restored, and has been kept in pristine condition ever since.

Geoffrey Wright arrived at Peabody in 1976. The affilia-
tion of Peabody with Johns Hopkins in 1977 gave the conservatory access to the computers and expertise available at the University and made possible the Conservatory’s entrance into computer music. Under the direction of Geoffrey Wright and with the gracious assistance of Leland Smith, SCORE and MUS10 was installed on the Johns Hopkins DEC PDP-10. Barry Vercoe provided Music 11, which was run on a Johns Hopkins PDP-11/45 computer in the Chemical Engineering Department. Later, F. Richard Moore and Gareth Loy provided Cmusic to Peabody. Ultimately Csound became our primary computer music language during this period. Initially, DAC systems were not allowed on the shared mainframe university computers, so Dexter Morrill at Colgate kindly converted our sample files to audio. Finally, with the department-sized DEC PDP-11/45, DAC/ADC systems were attached. Visiting professor Vladimir Ussachevsky donated a commercial DAC/ADC system for our exclusive use.

McGregor Boyle arrived at Peabody in 1982. The studio bought its first computer that year, an IBM PC-XT. Although too slow to make sound, the computer was harnessed to generate triggers and continuous control voltage signals through a specially designed DAC/ADC to control the Moog synthesizers in real-time and in polyphony. This hybrid system worked well, but when MIDI came out in 1983 the “pmusic” control language written by doctoral student Rob Mari was converted to process MIDI as well.

Wright and Boyle founded the Computer Music Consort in 1983. This professional performing ensemble has appeared at the Kennedy Center in Washington D.C. and at Symphony Space in New York City, among other places. A gift allowed Peabody to create a lecture series, the Friedberg Lectures, which has featured speakers such as Roger Reynolds, Paul Lansky, Stephen McAdams and Max Matthews. Wright also founded the Combined Laboratory for Audio Interdisciplinary Research (CLAIR) in 1984. CLAIR has overseen research in Brain-Generated Music, among other topics.

Peabody added a second studio, now known as Production Studio 312, in 1991. Both studios at that time were primarily MIDI studios, with the familiar racks of MIDI gear filling the space. Over the years the department has continued to expand, and now occupies a suite of five rooms on the third floor of the Conservatory. The original studio is now known as the Teaching Studio 314, and it is where most classes are held. The other two studios are the Digital Performance Studio 309, which is the home of our Yamaha MIDI grand piano, and the Digital Arts Studio 307, a collaborative learning environment for our students.

In 1989, Peabody joined its Electronic and Computer Music Studios into the Peabody Computer Music Department (PCM) and began offering degrees with the creation of the Master of Music in Computer Music degree. We were assisted by Hopkins Computer Science students, one of whom was Daniel Barrett. The PCM faculty has at times included technology specialists Edmund Pirali, Ichiro Fujinaga, and Craig Sapp. Over subsequent years Peabody graduates have had an enormous impact on the Computer Music community. Our alumni can be found all over the world in music production and teaching institutions. A Bachelor’s degree in Computer Music began in 2004, and now there is an optimal balance between undergraduate and graduate students.

Being situated in a conservatory has had a considerable influence on Peabody Computer Music. There are over a thousand concerts a year at the conservatory, so many composers tend to focus on writing music that combines computer music with live performance. We find that there is an increase in young, skilled performers who are technically experienced. In addition to our own concerts and those of the Composition Department, we are also called on to assist the Orchestra, Wind Ensemble, and Opera Departments when they have technical needs. We also assist our sister institution, the Yong Siew Toh Conservatory in Singapore, which we helped to found and with whom we have an ongoing relationship. Exchange students can study in a joint degree program at both institutions.

Today Peabody students can be found participating in the ICMC and SEAMUS Conferences, as well as being awarded international prizes. Last year, for example there were four Peabody students performed at ICMC, and this year we will have four presenting their work at SEAMUS.

Some notable Peabody alumni include Michael Hedges, an extraordinary guitarist who released several recordings for Wyndham Hill records and performed all over the world; Richard Dudas, who worked at IRCAM and Cycling’74 and now is on the faculty at Hanyang University in Seoul; Seongah Shin is on the faculty at Keimyung University (South Korea); Matthew Burtner, now Associate Professor of music at the University of Virginia; Elizabeth Anderson, a successful composer now based in Europe; Lynn Kowal, Darren Otero, and Bijan Olia, all successful film composers based in Hollywood; Chris Mandra, who created the original website for National Public Radio; Michael Straus, now Assistant Dean for Facilities and Technology at Oberlin Conservatory; Margaret Schedel, Associate Professor of Music at Stonybrook University; Juha Ojala, who teaches at the University of Oulu in Finland; Griffin Cohen, composer and sound designer for video games at Firaxis; and Yiyi Cui, now teaching at Dalian University in China.

2. LOOKING FORWARD

2.1 International Collaborations

Peabody Computer Music collaborates with studios and colleges worldwide, and in recent years especially with Asian institutions. In April 2014 PCM participated in the Handmade Project with Guling Street Avant-Garde Theatre [7] (Taipei) and Keimyung University (South Korea)[8].

Handmade was hosted primarily by PCM alumna Sandra Wuan-Chin Li, who is music director of Guling Street Avant-Garde Theatre. Handmade featured music from musicians and students in Baltimore, Seoul, and Taipei. Five pieces from Peabody Computer Music students were presented in concert, including (Scribble by Robby Neubauer, Mirage by Sunhuimei Xia, Beijing Impression by Yiyi Cui, Papi Flu-
ently by Francesca D’Uva, and Dirge by Ivan Voinov). Visual artists from the Guling Street Avant-Garde Theatre made videos for some of the student’s music. Pieces from Seoul were created by students from Keimyung University (South Korea) under the guidance of Dr. Seongah Shin, also a Peabody alumna.

In the summer of 2014, PCM collaborated in a remote Pd (Pure Data) workshop with Guling Street Avant-Garde Theatre in Taipei.

Figure 2. Remote Pure Data workshop

The 15th International Society for Music Information Retrieval (ISMIR) conference was held on October 27-31, 2014 in Taipei, Taiwan. Peabody Computer Music alumnae Sandra Wuan-Chin Li (MM 1999) and Sunhuimei Xia (MM 2014) were both selected for inclusion. Li’s Ban Shan, and Xia’s Mirage were performed at the ISMIR concert on Oct 29. Former faculty member Dr. Ichiro Fujinaga also attended the conference—resulting in three generations of the PCM community in attendance at this event. Peabody has a long-standing relationship with the ISMIR conference, having co-hosted the 2003 event in Baltimore along with Johns Hopkins University and the Library of Congress.

The Peabody Conservatory has established exchange programs with both Wuhan Conservatory (China) and the Communication University of China. The exchange program with Wuhan Conservatory was begun in 2011, and the program with the Communication University of China began in 2014. Computer Music is one of the most popular programs in the exchange program, and these exchange programs and collaborations have raised the department’s profile across Asia.

2.2 Institutional Collaborations

Peabody offers a wide variety of opportunities for collaboration with other colleges and universities. Two prominent collaborative partners with Peabody are the Johns Hopkins University (JHU) and the Maryland Institute College of Art (MICA). Collaborations may be for-credit classes offered at both institutions, or may be outside events organized ad hoc by students or faculty.

One of the collaborative classes offered is “Visualizing Music” taught by Peabody faculty member David Smooke and Johns Hopkins faculty member Phyllis Berger. Since Peabody is a division of Johns Hopkins University, collaboration between the two institutions can be credited classes offered simultaneously by both institutions. “Visualizing Music” brings together composers from Peabody and photographers from JHU who focus on creating a final project which is an interdisciplinary work growing out of the conversations and passions of the two student groups. The final results were used to create an exhibition and concert at the JHU Evergreen Museum and Library [9].

Collaborations with MICA are usually organized outside of classes by the students or faculty. MICA artists often seek out Peabody students to collaborate on creating works such as animations, gallery institutions, and performance art. However, sometimes faculty members from either institution organize larger collaborations between the students.

An example of this larger faculty-mediated approach is the Peabody/MICA collaboration organized by James Rouvelle, faculty member at MICA. Rouvelle pairs Peabody students with MICA artists and allows them to work together to create an open-ended project with the goal of public presentations at the Walters Art Museum [10]. Students are encouraged create any kind of collaborative art they can imagine, whether it is performance art, animation, interactive installations, artwork being paired with music or anything else the students can devise.

PCM graduate Evan Combs founded the National Student Electronic Music Event (NSEME) at Peabody in 2011 to create a self-sustaining series of student peer-to-peer collaborations among universities. This series, now in its fourth year, continues to develop and expand to different universities [11].

2.3 The Network: Peabody/Johns Hopkins/Telemusic

In the summer of 2014, Peabody Computer Music completed a long-planned upgrade of its networking infrastructure, allowing the department to become more fully integrated into the Johns Hopkins network. The upgrade has culminated in a fully-integrated, LDAP-enabled network running a host of collaborative and research software. Our new gigabit network allows us to stream uncompressed audio throughout the five studios that comprise the Computer Music Suite, as well as to our Recording Arts and Information Technology departments. This network is connected to the larger Hopkins WAN via fiber-optics, which will allow us to stream data to other Hopkins satellite campuses in the future.

Our networking capabilities have already been put to the test. In 2013, the Net-Music conference was hosted by the Yong Siew Toh Conservatory of Music at the National University of Singapore, The Peabody Institute of the Johns Hopkins University in Baltimore, the Center for Computer Research in Music and Acoustics (CCRMA) at Stanford University, the Rensselaer Polytechnic Institute Department of the Arts in Troy, New York, the Schulich School of Music at McGill University in Montreal, the Sonic Arts Research Centre at the School of Creative Arts at the Queen’s University Belfast, and the School of Creative and Performing Arts, Humber College, Toronto [12]. The purpose of this sympo-
sium was “to serve as a brainstorming session for identifying future research and creative activities involving the Internet as a primary creative medium in music. It served[d] as a forum for bringing together artists, technologists, and researchers who are actively involved in individual and collaborative projects over the Internet for music performance and composition. In particular, [the researchers were interested in exploring] areas of creative activity that make inherent use of the Internet and related technologies for unique music composition and performance works” [12].

Peabody and Johns Hopkins have also begun live-streaming concerts from Miriam A. Friedberg Concert Hall. Beginning on November 23rd, 2013, with Leon Fleisher conducting the Peabody Symphony Orchestra, selected orchestral and chamber concerts have been broadcast across the world.

2.4 The New Peabody Conservatory

In June of 2014, Fred Bronstein, former president and CEO of the St. Louis Symphony, became the new Dean of the Peabody Institute of the Johns Hopkins University. In addition to ensuring that Peabody’s high level of quality will continue he promotes “...the interdisciplinary space where music intersects with other subject areas, innovation in Peabody’s curriculum and digital reach, and the institute’s connection to the community” [3].

One of his first actions was to host a university-wide symposium “What’s Next for Classical Music?” [4], [5]. During the 3-hour symposium Bronstein moderated a panel discussion featuring maestra Marin Alsop, music director of the Baltimore Symphony Orchestra; Ben Cameron, director of arts fundraising at the Doris Duke Charitable Trust; Thomas Dolby, Homewood Professor of the Arts at Johns Hopkins; Marina Piccinini, concert flutist and Peabody faculty member; and Jesse Rosen, president and CEO of the League of American Orchestras [3].

Peabody worked with our JHU Colleagues to present the MUSIC MIND MEANING Conference 2014 [13]. The conference brought together scientists from the field of music cognition and renowned musicians for a two-day event to explore the relationships between music and science at the Peabody Institute of Music.

Of particular promise is the new collaboration between Peabody, Johns Hopkins, and the Maryland Institute College of Art under the artistic direction of digital pioneer Thomas Dolby, recently named the first Homewood Professor of the Arts. This new enterprise, dubbed “Station North Arts”, will bring together film, composition, recording arts, and computer music [6]. “Dolby’s appointment is made possible in part due to a grant from the Andrew W. Mellon Foundation. Last year, the foundation gave Johns Hopkins $1.2 million to launch a collaboration between the Krieger School of Arts and Sciences and the Peabody Institute—the Interdisciplinary Program in Music—and to support initiatives aimed at strengthening the integration of the arts into academic life” [6].

Johns Hopkins, MICA and the Maryland Film Festival will develop and renovate the Parkway Theatre as a three-screen, 600-seat film center and live performance complex. It will also provide classroom space and facilities to develop new music technology projects [6].

3. CONCLUSION

The future of Peabody Computer Music looks bright as we continue to expand our relationships with other institutions at home and abroad, and with other major projects within the Johns Hopkins University.

4. REFERENCES


